be removed from the front without unbolting bus or cable connections or deenergizing the supply, unless the switchboard is divided into sections, such that each section is capable of providing power to maintain the vessel in a navigable condition, and meets § 111.30–24 (a) and (b).

[CGD 94–108, 61 FR 28278, June 4, 1996]

§ 111.30–5 Construction.

(a) All low voltage and medium voltage switchboards (as low and medium are determined within the standard used) must meet—

(1) For low voltages, either section 17.2 of IEEE Std 45 or IEC 92–302, clause 6; or

(2) For medium voltages, either section 17.3 of IEEE Std 45 or IEC 92–503, as appropriate.

(b) Each switchboard must be fitted with a dripshield unless the switchboard is a deck-to-overhead mounted type which cannot be subjected to leaks or falling objects.

[CGD 94–108, 61 FR 28278, June 4, 1996, as amended at 62 FR 23908, May 1, 1997]

§ 111.30–11 Deck coverings.

Non-conducting deck coverings, such as non-conducting mats or gratings, suitable for the specific switchboard voltage must be installed for personnel protection at the front and rear of the switchboard and must extend the entire length of, and be of sufficient width to suit, the operating space.

[CGD 94–108, 62 FR 23908, May 1, 1997]

§ 111.30–15 Nameplates.

(a) Each device must have a nameplate showing the device's function.

(b) Each nameplate for a circuit breaker must show the electrical load served and the setting of the circuit breaker.

§ 111.30–17 Protection of instrument circuits.

(a) Each circuit that supplies a device on a switchboard, except a circuit under paragraph (b) of this section, must have overcurrent protection.

(b) A circuit that supplies a device on a switchboard must not have overload protection if it supplies:

(1) An electric propulsion control;

(2) A voltage regulator;

(3) A ship's service generator circuit breaker tripping control; or

(4) A device that creates a hazard to the vessel if deenergized.

(c) If short circuit protection is used in any of the circuits listed in paragraph (b) of this section, it must be set at not less than 500% of the expected current.

(d) A secondary circuit of a current transformer must not be fused, and the circuit from a current transformer to a device that is not in the switchboard must have a high voltage protector to short the transformer during an open circuit.

§ 111.30–19 Buses and wiring.

(a) *General.* Each bus must meet the requirements of either—

(1) Section 17.11 of IEEE Std 45; or

(2) IEC 92–302 (clause 6).

(b) *Wiring.* Instrumentation and control wiring must be—

(1) Suitable for installation within in a switchboard enclosure and be rated at 90° C or higher;

(2) Stranded copper;

(3) No. 14 AWG (2.10 mm^2) or larger or must be ribbon cable or similar conductor size cable recommended for use in low-power instrumentation, monitoring, or control circuits by the equipment manufacturer;

(4) Flame retardant meeting ANSI/UL 1581 test VW–1 or IEC 332–1; and

(5) Extra flexible, if used on a hinged panel.

[CGD 94–108, 61 FR 28278, June 4, 1996, as amended at 62 FR 23908, May 1, 1997]

§ 111.30–24 Generation systems greater than 3000 kw.

Except on a non-self-propelled mobile offshore drilling unit (MODU) and a non-self-propelled floating Outer Continental Shelf facility, when the total installed electric power of the ship's service generation system is more than 3000 kW, the switchboard must have the following:

(a) At least two sections of the main bus that are connected by:

(1) A non-automatic circuit breaker;

(2) A disconnect switch; or

(3) Removable links.

(b) As far as practicable, the connection of generators and duplicated